What is claimed is:

1. (Currently amended) A vehicle running range switching device for switching among a plurality of running ranges of a vehicle transmission, from one of the running ranges to a running range selected by a vehicle driver, responsive to an electric signal, said vehicle running range switching device comprising:

a range selection unit for use by the vehicle driver to generate the electric signal;

a motor which outputs rotary motion controlled responsive to the electric signal from the range selection unit;

a conversion mechanism for converting rotary motion of the motor to linear motion, wherein the conversion mechanism is a ball screw including a ball screw shaft rotated by the motor, a ball nut driven by the ball screw shaft so as to move axially with respect thereto and balls interposed between the ball screw shaft and the ball nut;

an intermediate mechanism engaged with and pivoting with linear motion of the ball nut, for converting linear motion obtained by the conversion mechanism to swinging motion;

a range switching member, which is movable across a plurality of selection regions corresponding to the plurality of running ranges and which is switched, by the swinging motion, to a specific selection region corresponding to the running range selected by the driver; and

a detent mechanism for holding the range switching member in the specific selection region.

2. (Currently amended) The vehicle running range switching device according to claim 1, wherein the intermediate mechanism is disposed between the range switching member and the conversion mechanism, and the range switching member is switched to a specified selection region among the plurality of selection regions through the intermediate member in accordance with the rotary motion of the motor.

3. (Currently amended) The vehicle running range switching device according to claim 2, wherein the intermediate mechanism includes an intermediate arm for converting the

linear motion to the swinging motion.

4. (Canceled)

5. (Currently amended) The vehicle running range switching device according to claim 1, wherein the detent mechanism includes a detent lever with an integral arm, and wherein the integral arm member converts the swinging motion with which the detent lever moves to linear motion for positioning said range switching member.

6. (Original) The vehicle running range switching device according to claim 5, wherein the range switching member is a manual valve and wherein the linear motion imparted by the integral arm slides the manual valve to a position corresponding to the specific selection region.

7. (Original) The vehicle running range switching device according to claim 6, further comprising:

a case member on which the motor is mounted,

a position detecting unit for detecting the position of the range switching member, wherein

the case member accommodates at least one of a first control unit for controlling the motor base on an output from the position detecting unit and a second control unit for controlling the vehicle transmission.

8. (Currently amended) The vehicle running range switching device according to claim 7, wherein the position detecting unit detects the position of the range switching member through the intermediate mechanism.

9. (Canceled)

10. (Withdrawn) The vehicle range switching device according to claim 8, wherein the conversion mechanism includes an axial cam member, having a spiral cam groove, which

is rotated by the motor, and a roller-shaped cam follower which is rotatably supported by a conversion arm and which is moved along the cam groove by rotation of the cam member.

11. (Withdrawn) The vehicle range switching device according to claim 10 wherein said intermediate member further includes a shaft to which said detent lever and said intermediate arm are fixed for rotation therewith.

12. (Original) The vehicle running range switching device according to claim 5, wherein the range switching member is joined to the integral arm.

13. (Withdrawn) A vehicle running range switching device for switching among a plurality of running ranges of a vehicle transmission, from one of the running ranges to a running range selected by a vehicle driver, responsive to an electric signal, said vehicle running range switching device comprising:

a range selection unit for use by the vehicle driver to generate the electric signal;

a motor which outputs rotary motion controlled responsive to the electric signal from the range selection unit; and

a conversion mechanism for converting the rotary motion of the motor to pivoting motion so as to switch a range switching member, said conversion mechanism including a screw member which is rotated by rotation of the motor, a nut member which is fastened to the screw member, and a rotation stopping unit which prohibits rotary motion of the nut member and which allows linear movement along the screw member, the nut member being moved linearly by rotation of the screw member so as to switch the range switching member.

14. (Withdrawn) The vehicle range switching device according to claim 13, wherein the rotation stopping unit is supported by a case.

15. (Withdrawn) The vehicle range switching device according to claim 14, wherein the case accommodates at least the conversion mechanism.

16. (Withdrawn) The vehicle range switching device according to claim 15, wherein the rotation stopping unit includes a guide groove formed in the nut member and extending in the axial direction of the screw member; and an engagement member loosely fitted into the guide groove and which is supported by the case member.

17. (Withdrawn) The vehicle range switching device according to claim 16, wherein the screw member is a ball screw shaft wherein the nut member is a ball nut and wherein the conversion mechanism further includes an intermediate arm which is engaged with the ball nut and which swings with linear motion of the ball nut so as to switch the range switching member, the arm member having a bifurcated section which is engaged with opposing sides of the ball nut.

18. (Withdrawn) A vehicle running range switching device for switching among a plurality of running ranges of a vehicle transmission, from one of the running ranges to a running range selected by a vehicle driver, responsive to an electric signal, said vehicle running range switching device comprising:

a range selection unit for use by the vehicle driver to generate the electric signal;

a motor which outputs rotary motion controlled responsive to the electric signal from the range selection unit;

a conversion mechanism for converting rotary motion of the motor to linear motion so as to switch a range switching member; and

an auxiliary switching unit for manually switching the range switching member independently of the electric signal.

19. (Withdrawn) The vehicle range switching device according to claim 18, wherein the auxiliary switching unit is connected to a power transmitting member for transmitting power from the conversion mechanism to the range switching member, such that the auxiliary switching unit is capable of being disconnected from the power transmitting member.

20. (Withdrawn) The vehicle range switching device according to claim 19, wherein the auxiliary switching unit switches the range switching member by manually driving the conversion mechanism.

21. (Withdrawn) The vehicle range switching device according to claim 20, wherein the conversion mechanism includes a shaft which is rotated by rotation of the motor, and a linearly moving member which moves linearly along the shaft, the auxiliary switching unit being selectively engaged with and disengaged from the linearly moving member.

22. (Withdrawn) The vehicle range switching device according to claim 21, wherein the auxiliary switching unit has an axial member which is disposed in parallel to the axis of the shaft and which is manually slidable in the axial direction.

23. (Withdrawn) The vehicle running range switching device according to claim 22, wherein the conversion mechanism includes a ball screw shaft that is rotated by the motor; a ball nut which is mounted on the ball screw shaft for axial movement thereon, driven by rotation of the ball screw shaft; and balls interposed between the ball screw shaft and ball nut.

24. (Withdrawn) The vehicle range switching device according to claim 23, wherein the ball nut has a protrusion that protrudes toward the axial member side, and the axial member has a hook which engages the protrusion when the axial member slides axially so as to move the ball nut.

25. (Withdrawn) The vehicle range switching device according to claim 19, wherein the auxiliary switching unit switches the range switching device by driving an intermediate member disposed between the conversion mechanism and the range switching member.

26. (Withdrawn) The vehicle range switching device according to claim 25, wherein the conversion mechanism includes a shaft which is rotated by rotation of the motor, and a

linearly moving member which moves linearly along the shaft, the auxiliary switching unit being selectively engaged with and disengaged from the linearly moving member.

27. (Withdrawn) The vehicle range switching device according to claim 26, wherein the auxiliary switching unit has an axial member which is disposed in parallel to the axis of the shaft and which is manually slidable in the axial direction.

28. (Withdrawn) The vehicle running range switching device according to claim 27, wherein the conversion mechanism includes a ball screw shaft that is rotated by the motor; a ball nut which is mounted on the ball screw shaft for axial movement thereon, driven by rotation of the ball screw shaft; and balls interposed between the ball screw shaft and ball nut.

29. (Withdrawn) The vehicle range switching device according to claim 28, wherein the ball nut has a protrusion that protrudes toward the axial member side, and the axial member has a hook which engages the protrusion when the axial member slides axially so as to move the ball nut.

30. (New) The vehicle running range switching device according to claim 1 wherein the intermediate mechanism includes an intermediate arm engaged with the ball nut and an intermediate shaft connecting the intermediate arm with the detent mechanism.